

| Form PTO-1449   |      | U.S. Department of Commerce<br>Patent and Trademark Office |   |   |   |   |      | Atty. Docket No.<br>P23691     |          | Serial No.<br>10/646,736 |          |                               |  |
|---|------|--|---|---|---|---|------|--------------------------------|----------|--------------------------|----------|-------------------------------|--|
| INFORMATION DISCLOSURE STATEMENT<br>BY APPLICANT<br>(Use several sheets if necessary) |      | Applicant<br>Hiroshi NOMURA                                |   |   |   |   |      | Filing Date<br>August 25, 2003 |          | Group<br>2872            |          |                               |  |
|   |      |  |   |   |   |   |      |                                |          |                          |          |                               |  |
| U.S. PATENT DOCUMENTS   |      |  |   |   |   |   |      |                                |          |                          |          |                               |  |
| EXAMINER<br>INITIAL   |      | DOCUMENT NUMBER  |   |   |   |   | DATE | NAME                           |          | CLASS                    | SUBCLASS | FILING DATE<br>IF APPROPRIATE |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 9    | 5                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 9    | 3                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 6 | 2 | 5 | 3    | 6                              | 04/01/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 6    | 8                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 7    | 0                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 6 | 2 | 5 | 3    | 7                              | 04/01/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 7    | 2                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 9    | 1                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 8    | 9                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 7    | 1                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 7 | 7    | 7                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 7 | 7    | 8                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 6    | 9                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 6    | 7                              | 03/18/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 7 | 7    | 5                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 9    | 6                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 0 | 9    | 0                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 4 | 2 | 7 | 7    | 6                              | 03/04/04 | NOMURA                   |          |                               |  |
|   | 2004 | /0   | 0 | 5 | 1 | 9 | 8    | 1                              | 03/18/04 | NOMURA                   |          |                               |  |
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|   |      | 4  | 5 | 2 | 5 | 0 | 5    | 0                              | 06/25/85 | OHASHI                   |          |                               |  |
|   |      | 4  | 6 | 4 | 3 | 5 | 5    | 5                              | 02/17/87 | WAKABAYASHI              |          |                               |  |
|   |      | 4  | 7 | 2 | 1 | 9 | 7    | 2                              | 01/26/88 | WAKABAYASHI              |          |                               |  |
|   |      | 4  | 7 | 9 | 2 | 8 | 2    | 2                              | 12/20/88 | AKIYAMA et al.           |          |                               |  |
|   |      | 5  | 8 | 1 | 8 | 6 | 4    | 7                              | 10/06/98 | NISHIO et al.            |          |                               |  |
|   |      | 6  | 0 | 3 | 1 | 9 | 9    | 8                              | 02/29/00 | SHONO                    |          |                               |  |
|   |      | 4  | 4 | 5 | 1 | 1 | 2    | 9                              | 05/29/84 | IKARI et al.             |          |                               |  |
| EXAMINER <i>[Signature]</i>   |      |  |   |   |   |   |      | DATE CONSIDERED <i>9/20/04</i> |          |                          |          |                               |  |

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|--|------|--|---|---|---|---|------|------|----------------------------|--------------------------|----------|-------------------------------|
|  |      | Applicant<br>Hiroshi NOMURA                                |   |   |   |   |      |      |                            |                          |          |                               |
|  |      | Filing Date<br>August 25, 2003                             |   |   |   |   |      |      | Group<br>2872              |                          |          |                               |
| <b>U.S. PATENT DOCUMENTS</b>   |      |  |   |   |   |   |      |      |                            |                          |          |                               |
| EXAMINER<br>INITIAL  |      | DOCUMENT NUMBER  |   |   |   |   | DATE | NAME |                            | CLASS                    | SUBCLASS | FILING DATE<br>IF APPROPRIATE |
|  |      | 4  | 6 | 4 | 3 | 5 | 5    | 4    | 02/17/87                   | OGAWA                    |          |                               |
|  |      | 4  | 7 | 7 | 1 | 3 | 0    | 3    | 09/13/88                   | MATSUMOTO et al.         |          |                               |
|  |      | 4  | 8 | 8 | 7 | 1 | 0    | 7    | 12/12/89                   | NAKAMURA et al.          |          |                               |
|  |      | 5  | 1 | 3 | 6 | 3 | 2    | 4    | 08/04/92                   | TSUBOI et al.            |          |                               |
|  |      | 5  | 7 | 6 | 5 | 0 | 4    | 9    | 06/09/98                   | HASE et al.              |          |                               |
|  |      | 5  | 8 | 3 | 2 | 3 | 2    | 6    | 11/03/98                   | TANAKA                   |          |                               |
|  |      | 6  | 3 | 6 | 6 | 3 | 2    | 3    | 04/02/02                   | SHONO                    |          |                               |
|  |      | 6  | 1 | 1 | 5 | 1 | 9    | 0    | 09/05/00                   | HIRAI                    |          |                               |
|  |      | 6  | 0 | 6 | 4 | 5 | 3    | 3    | 05/16/00                   | KENIN et al.             |          |                               |
|  | 2003 | /0   | 0 | 8 | 1 | 3 | 2    | 5    | 05/01/03                   | NOMURA et al.            |          |                               |
|  | 2001 | /0   | 0 | 2 | 4 | 5 | 7    | 3    | 09/27/01                   | NOMURA et al.            |          |                               |
|  | 2002 | /0   | 1 | 3 | 5 | 9 | 0    | 0    | 09/26/02                   | NOMURA et al.            |          |                               |
|  |      | 6  | 0 | 7 | 5 | 6 | 5    | 5    | 06/13/00                   | FUNAHASHI                |          |                               |
|  | 2002 | /0   | 1 | 3 | 5 | 9 | 0    | 1    | 09/26/02                   | NOMURA et al.            |          |                               |
|  | 2003 | /0   | 0 | 8 | 1 | 3 | 2    | 7    | 05/01/03                   | NOMURA et al.            |          |                               |
|  | 2002 | /0   | 1 | 3 | 5 | 8 | 9    | 6    | 09/26/03                   | NOMURA et al.            |          |                               |
|  |      | 6  | 0 | 5 | 5 | 1 | 1    | 6    | 04/25/00                   | NOMURA et al.            |          |                               |
|  |      | 6  | 2 | 0 | 4 | 9 | 7    | 7    | 03/20/01                   | IWASA                    |          |                               |
|  |      | 5  | 4 | 3 | 0 | 5 | 1    | 6    | 07/04/95                   | UZIIE et al.             |          |                               |
|  | 2003 | /0   | 0 | 8 | 1 | 9 | 4    | 8    | 05/01/03                   | NOMURA et al.            |          |                               |
|  | 2001 | /0   | 0 | 1 | 9 | 4 | 5    | 8    | 09/06/01                   | NOMURA et al.            |          |                               |
|  |      | 4  | 9 | 9 | 3 | 8 | 1    | 5    | 02/19/91                   | YAMAZAKI et al.          |          |                               |
|  |      | 5  | 7 | 3 | 1 | 9 | 1    | 3    | 03/24/98                   | IMANARI                  |          |                               |
|  |      | 5  | 7 | 3 | 9 | 9 | 6    | 2    | 04/14/98                   | ASAKURA et al.           |          |                               |
|  | 2003 | /0   | 1 | 5 | 6 | 8 | 3    | 2    | 08/21/03                   | NOMURA et al.            |          |                               |
|  |      | 5  | 5 | 8 | 7 | 7 | 5    | 4    | 12/24/96                   | KATAYAMA et al.          |          |                               |
|  |      | 6  | 0 | 5 | 2 | 5 | 3    | 5    | 04/18/00                   | UNO                      |          |                               |
| EXAMINER   |      |  |   |   |   |   |      |      | DATE CONSIDERED            | 9/20/04                  |          |                               |

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|--|------|-----------------|---|---|---|---|---|--------------------------------|--------------------------|------------------|----------|-------------------------------|--|--|--|
|  |      |                 |   |   |   |   |   | Applicant<br>Hiroshi NOMURA    |                          |                  |          |                               |  |  |  |
|  |      |                 |   |   |   |   |   | Filing Date<br>August 25, 2003 |                          |                  |          | Group<br>2872                 |  |  |  |
| <b>U.S. PATENT DOCUMENTS</b>   |      |                 |   |   |   |   |   |                                |                          |                  |          |                               |  |  |  |
| EXAMINER<br>INITIAL  |      | DOCUMENT NUMBER |   |   |   |   |   | DATE                           | NAME                     | CLASS            | SUBCLASS | FILING DATE<br>IF APPROPRIATE |  |  |  |
|  |      | 5               | 2 | 2 | 3 | 8 | 7 | 3                              | 06/29/93                 | TSUBOI           |          |                               |  |  |  |
|  |      | 5               | 0 | 8 | 6 | 3 | 1 | 2                              | 02/04/92                 | TANAKA et al.    |          |                               |  |  |  |
|  |      | 5               | 4 | 9 | 9 | 1 | 4 | 3                              | 03/12/96                 | SAKAMOTO et al.  |          |                               |  |  |  |
|  |      | 6               | 0 | 6 | 9 | 7 | 4 | 5                              | 05/30/00                 | FUJII et al.     |          |                               |  |  |  |
|  |      | 6               | 3 | 2 | 4 | 0 | 1 | 9                              | 11/27/01                 | TAKANASHI et al. |          |                               |  |  |  |
|  |      | 5               | 4 | 8 | 5 | 3 | 1 | 5                              | 01/16/96                 | NOMURA et al.    |          |                               |  |  |  |
| <b>FOREIGN PATENT DOCUMENTS</b>  |      |                 |   |   |   |   |   |                                |                          |                  |          |                               |  |  |  |
|  |      | DOCUMENT NUMBER |   |   |   |   |   | DATE                           | COUNTRY                  | CLASS            | SUBCLASS | TRANSLATION<br>YES      NO    |  |  |  |
|  |      | 58              | - | 1 | 4 | 5 | 9 | 3                              | 0                        | 08/31/83         | JAPAN    | 1                             |  |  |  |
|  |      | 61              | - | - | 6 | 9 | 0 | 0                              | 2                        | 04/09/86         | JAPAN    |                               |  |  |  |
|  |      | 61              | - | 2 | 7 | 0 | 7 | 3                              | 7                        | 12/01/86         | JAPAN    |                               |  |  |  |
|  |      | 63              | - | 1 | 4 | 9 | 6 | 2                              | 9                        | 06/22/88         | JAPAN    |                               |  |  |  |
|  |      | 64              | - | 3 | 4 | 6 | 2 | 3                              | 03/02/89                 | JAPAN            |          | X                             |  |  |  |
|  |      | 6               | - | 1 | 8 | 7 | 7 | 7                              | 01/28/94                 | JAPAN            |          | X                             |  |  |  |
|  |      | 7               | - | 1 | 9 | 1 | 2 | 4                              | 9                        | 07/28/95         | JAPAN    |                               |  |  |  |
|  |      | 11              | - | 1 | 0 | 9 | 2 | 0                              | 3                        | 04/23/99         | JAPAN    |                               |  |  |  |
|  |      | 58              | - | 1 | 0 | 7 | 0 | 8                              | 01/21/83                 | JAPAN            |          |                               |  |  |  |
|  |      | 2               | 3 | 4 | 4 | 6 | 6 | 1                              | 06/14/00                 | UNITED KINGDOM   |          |                               |  |  |  |
|  |      | 2               | 2 | 6 | 2 | 3 | 5 | 6                              | 06/16/93                 | UNITED KINGDOM   |          |                               |  |  |  |
|  | 2003 | -               | 2 | 0 | 7 | 7 | 0 | 9                              | 07/25/03                 | JAPAN            |          |                               |  |  |  |
|  |      | 2               | 3 | 0 | 9 | 5 | 5 | 1                              | 07/30/97                 | UNITED KINGDOM   |          |                               |  |  |  |
|  |      | 2               | 3 | 4 | 4 | 6 | 6 | 2                              | 06/14/00                 | UNITED KINGDOM   |          |                               |  |  |  |
|  |      | 2               | 2 | 6 | 1 | 2 | 9 | 8                              | 05/12/93                 | UNITED KINGDOM   |          |                               |  |  |  |
|  | 2002 | -               | 2 | 7 | 7 | 7 | 1 | 9                              | 09/25/02                 | JAPAN            |          |                               |  |  |  |
| EXAMINER <i>[Signature]</i>  |      |                 |   |   |   |   |   | DATE CONSIDERED <i>9/20/04</i> |                          |                  |          |                               |  |  |  |
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|--|--|--|---|-------|----------|--------------------------------|---------|--------------------------------|-------|--------------------------|-------------------------------|
| <b>INFORMATION DISCLOSURE STATEMENT<br/>BY APPLICANT</b><br>(Use several sheets if necessary)  |  |  |   |       |          |                                |         | Applicant<br>Hiroshi NOMURA    |       |                          |                               |
|  |  |  |   |       |          |                                |         | Filing Date<br>August 25, 2003 |       | Group<br>2872            |                               |
| <b>U.S. PATENT DOCUMENTS</b>   |  |  |   |       |          |                                |         |                                |       |                          |                               |
| EXAMINER<br>INITIAL  |  | DOCUMENT NUMBER  |   |       |          | DATE                           | NAME    |                                | CLASS | SUBCLASS                 | FILING DATE<br>IF APPROPRIATE |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
| <b>FOREIGN PATENT DOCUMENTS</b>  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  | DOCUMENT NUMBER  |   |       |          | DATE                           | COUNTRY |                                | CLASS | SUBCLASS                 | TRANSLATION<br>YES      NO    |
| <i>10</i>  | -  | 2  | 8 | 2     | 3 9 4    | 10/23/98                       | JAPAN   |                                |       |                          |                               |
| <i>58</i>  | -  | 1  | 6 | 2     | 9 1 4    | 09/27/83                       | JAPAN   |                                |       |                          |                               |
| <i>0</i>   | 6  | 3  | 4 | 6 8 0 | 01/18/95 | E.P.O.                         |         |                                |       |                          |                               |
| <i>10</i>  | -  | 3  | 2 | 7 4 0 | 02/03/98 | JAPAN                          |         |                                |       | X                        |                               |
| <i>7</i>   | -  | 2  | 8 | 8     | 7 2 4    | 10/31/95                       | JAPAN   |                                |       |                          | X                             |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
| <b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>  |  |  |   |       |          |                                |         |                                |       |                          |                               |
| <i>1</i>   | English Language Abstract of JP 58-10708.    |  |   |       |          |                                |         |                                |       |                          |                               |
| <i>2</i>   | English Language Abstract of JP 2003-207709. |  |   |       |          |                                |         |                                |       |                          |                               |
| <i>3</i>   | English Language Abstract of JP 2002-277719. |  |   |       |          |                                |         |                                |       |                          |                               |
| <i>4</i>   | English Language Abstract of JP 10-282394.   |  |   |       |          |                                |         |                                |       |                          |                               |
| <i>5</i>   | English Language Abstract of JP 58-162914.   |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
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|  |  |  |   |       |          |                                |         |                                |       |                          |                               |
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